What is Claimed:

1. An isolated PEDF-R polynucleotide, wherein said polynucleotide is

(a) a polynucleotide that has the sequence of SEQ ID NO: 1, 2 or 4;

(b) a polynucleotide that hybridizes under stringent hybridization conditions to (a) and encodes a polypeptide having the sequence of SEQ ID NO: 3 or 5; or

(c) a polynucleotide that hybridizes under stringent hybridization conditions to (a) and encodes a polypeptide with at least 25 contiguous residues of the polypeptide of SEQ ID NO: 3 or 5; or

(d) a polynucleotide that hybridizes under stringent hybridization conditions to (a) and has at least 12 contiguous bases identical to or exactly complementary to SEQ ID NO: 1, 2, or 4,

wherein the polynucleotide encodes a polypeptide having PEDF-R activity.

2. An isolated PEDF-R polynucleotide, wherein said polynucleotide is

(a) a polynucleotide that has the sequence of SEQ ID NO: 12, 13, 15, or 16;

(b) a polynucleotide that hybridizes under stringent hybridization conditions to (a) and encodes a polypeptide having the sequence of SEQ ID NO: 14 or 17; or

(c) a polynucleotide that hybridizes under stringent hybridization conditions to (a) and encodes a polypeptide with at least 25 contiguous residues of the polypeptide of SEQ ID NO: 14 or 17; or

(d) a polynucleotide that hybridizes under stringent hybridization conditions to (a) and has at least 12 contiguous bases identical to or exactly complementary to SEQ ID NO: 12, 13, 15, or 16,

wherein the polynucleotide encodes a polypeptide having PEDF-R activity.

3. An isolated PEDF-R polynucleotide encoding a polypeptide comprising a sequence at least 60% identical to SEQ ID NO:3 and having PEDF-R activity.

4. An isolated PEDF-R polynucleotide encoding a polypeptide comprising a sequence at least 60% identical to SEQ ID NO:5 and having PEDF-R activity

5. The isolated PEDF-R polynucleotide of claim 1 encoding a polypeptide comprising the sequence of SEQ ID NO:3 or 5.

6. The PEDF-R polynucleotide of claim 1 encoding a polypeptide having a binding affinity of at least 10^4 M^{-1} for binding PEDF.

7. The PEDF-R polynucleotide of claim 1 comprising SEQ ID NO:1 or its complement.

8. The PEDF-R polynucleotide of claim 1 comprising SEQ ID NO:2 or its complement.

9. The PEDF-R polynucleotide of claim 1 comprising SEQ ID NO:4 or its complement.

10. A nucleic acid comprising the cDNA coding sequence of ATCC Deposit No. accession number BC017280.1, accession number XM_341960.1, or accession number AK031609.1.

11. A polypeptide comprising the amino acid sequence of ATCC Deposit No. accession number BAC27476.1, accession number XP_341961.1, or accession number AAH17280.1.

12. An isolated polynucleotide comprising a nucleotide sequence having at least 60% identity to SEQ ID NO:1, 2 or 4 or a complement thereof and having PEDF-R activity.

13. An isolated polypeptide comprising a nucleotides sequence that has at least 90% sequence identity to SEQ ID NO:3 or SEQ ID NO:5 and is immunologically cross-reactive with SEQ ID NO:3 or SEQ ID NO:5 or shares a biological function with native PEDF-R.

14. A vector comprising the isolated PEDF-R polynucleotide of claim 1.

15. An expression vector comprising the PEDF-R polynucleotide of claim 1 operatively linked to a regulatory sequence that controls expression of the polynucleotide in a host cell.

16. The expression vector of claim 15 wherein the polynucleotide is operatively linked to the regulatory sequence in an antisense orientation.

17. The expression vector of claim 15 wherein the polynucleotide is operatively linked to the regulatory sequence in a sense orientation.

18. A host cell comprising the polynucleotide of claim 1, or progeny of the cell.

19. The host cell of claim 18 which is a eukaryote.

20. A host cell comprising the polynucleotide of claim 1 operatively linked with a regulatory sequence that controls expression of the polynucleotide in a host cell.

21. The host cell of claim 20 wherein the nucleic acid is operatively linked to the regulatory sequence in an antisense orientation.

22. The expression vector of claim 20 wherein the nucleic acid is operatively linked to the regulatory sequence in a sense orientation.

23. An isolated DNA that encodes a PEDF-R protein as shown in SEQ ID NO:3 or 5.

24. An antisense oligonucleotide complementary to a messenger RNA comprising SEQ ID NO:1, 2, or 4 and encoding PEDF-R, wherein the oligonucleotide inhibits the expression of PEDF-R.

25. The polynucleotide of claim 1 that is RNA.

26. A method of producing a polypeptide comprising:

(i) culturing the host cell of claim 18 under conditions such that the polypeptide is expressed; and

(ii) recovering the polypeptide from the cultured host cell of its cultured medium.

27. An isolated polypeptide encoded by a polynucleotide of claim 1(a) or (b).

28. The polypeptide of claim 27 that has the amino acid sequence of SEQ ID NO:3 or 5.

29. An isolated polypeptide having 80% sequence identity to the amino acid sequence of SEQ ID NO:5 and having PEDF-R activity

30. The polypeptide of claim 29 comprising SEQ ID NO:3.

31. The polypeptide of claim 29 comprising SEQ ID NO:5.

32. The isolated polypeptide of claim 27 that is cell-membrane associated.

33. The isolated polypeptide of claim 27 that is soluble.

34. The isolated polypeptide of claim 27 that is fused with a heterologous peptide.

35. An isolated antibody that specifically binds to a polypeptide having the amino acid sequence as shown in SEQ ID NO:3 or SEQ ID NO:5.

36. An isolated antibody composition that specifically binds to a polypeptide of claim 27.

37. The isolated antibody composition of claim 35 that is monoclonal.

38. The isolated antibody composition of claim 35 that is polyclonal.

39. The isolated antibody of claims 37 or 38 that is labeled.

40. The isolated antibody of claims 37 or 38 that is conjugated to a toxic or non-toxic moiety.

41. The isolated antibody composition of claims 37 or 38 that is a neutralizing antibody.

42. A hybridoma capable of secreting the antibody that binds to a polypeptide of claim 37.

43. A method for identifying a compound or agent that binds to a PEDF-R polypeptide comprising:

(i) contacting a PEDF receptor polypeptide of claim 27 with the compound or agent under conditions which allow binding of the compound to the PEDF-R polypeptide to form a complex and

(ii) detecting the presence of the complex.

44. A method of detecting a PEDF-R polypeptide in a sample, comprising:

(i) contacting the sample with an antibody of claim 37, and

(ii) determining whether a hybridization complex has been formed between the antibody and the PEDF-R polypeptide.

45. A method of detecting a PEDF-R polypeptide in a sample, comprising:

(i) contacting the sample with a polynucleotide of claim 1 or a polynucleotide that comprises a sequence of at least 12 nucleotides and is complementary to a contiguous sequence of the polynucleotide of section (a) of claim 1; and

(ii) determining whether a hydridization complex has been formed.

46. The method of claim 45, wherein said method is used to diagnose a disease or disorder of the nervous system.

47. The method of claim 45, wherein said method is used to diagnose a disease or disorder associated with angiogenesis.

48. The method of claim 45, wherein said method is used to diagnose an ocular disease or disorder.

49. A method of detecting a PEDF-R nucleotide in a sample, comprising:

(i) using a polynucleotide that comprises a sequence of at least 12 nucleotides and is complementary to a contiguous sequence of a polynucleotide of section (a) of claim 1, in an amplification process, and

(ii) determining whether a specific amplification product has been formed.

50. The method of claim 49, wherein said method is used to diagnose a disease or disorder of the nervous system.

51. The method of claim 49, wherein said method is used to diagnose a disease or disorder associated with angiogenesis.

52. The method of claim 49, wherein said method is used to diagnose an ocular disease or disorder.

53. A pharmaceutical composition comprising a polynucleotide of claim 1, or a polypeptide of claim 27 or an antibody of claim 35 and a pharmaceutically acceptable carrier.

54. A pharmaceutical composition comprising an antibody of claim 35.

55. A method of modulating PEDF activity, comprising

(i) modulating with the expression of a PEDF-R gene;

(ii) modulating the ability of a PEDF-R protein to bind to another cell; or

(iii) modulating the ability of a PEDF-R protein to bind to another protein.

56. A method of modulating PEDF activity in a subject, comprising administering to the subject a therapeutically effective amount of the pharmaceutical composition of claim 53.

57. The method of claim 56 wherein the PEDF activity is neurotrophic, neuronotrophic, gliastatic, anti-angiogenic, or adipostatic.

58. The method of claim 56 wherein the PEDF activity is the inhibition of ocular angiogenesis or neovascularizaton.

59. The method of claim 58 wherein the ocular angiogenesis is caused by ischemia.

60. The method of claim 56 wherein the PEDF activity is the inhibition of retinal cell degeneration.

61. A method of treating a neurological disease or disorder in a subject comprising administering to the subject a therapeutically effective amount of the pharmaceutical composition of claim 53.

62. A method of treating an ocular disease or disorder in a subject comprising administering to the subject a therapeutically effective amount of the pharmaceutical composition of claim 53.

63. A method of treating macular degeneration in a subject comprising administering to the subject a therapeutically effective amount of the pharmaceutical composition of claim 53.